

### **REMARKS/ARGUMENTS**

Claims 1-3, 5-7, 9-42, 44-53 and 56-57 and 203-204 are currently pending in the application. Claims 4, 8, 43 and 54-55 have been canceled without prejudice. Claims 11, 13-21 and 23-36 have been rejoined. Claims 58-202 and 205-213 have been canceled without prejudice because they are drawn to a non-elected invention with traverse. Applicants respectfully submit that no additional fees are due at this time.

Applicants respectfully submit that the foregoing amendments to the claims are supported in the application as originally filed and that no new matter has been added. In view of the following remarks and amendments, applicants respectfully request a timely Notice of Allowance be issued in this case.

#### ***Claim Objections***

The Office objected to claims 11, 13-21 and 23-36 as being of improper dependant form. Claims 11, 13-21 and 23-36 have been amended to correct the dependency of the claims. Applicants respectfully request withdrawal of the objections.

#### ***Claim Rejections under 35 U.S.C. § 112, First Paragraph***

Claims 18-20, 23, 26 and 30-36 were rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Applicants respectfully submit that appropriate amendments have been made to the claims. The specification has been amended (new paragraph [0072.2]) to describe the datasets and terms disclosed in originally filed claims 18-20, 23, 26 and 30-36. As a result, Applicants respectfully submit that no new matter has been added. In addition, Applicants respectfully submit that these datasets and terms are well known to those skilled in the art as evidenced by printouts of search results on the databases available on the website for the National Center for Biotechnology Information (established in 1988) attached hereto as Exhibit A:

Claim	Search Term	PubMed Central Hits	Site Search Hits	Book Hits	Exhibit
18	“linkage database”	13	71	42	A-1
19	“splice variant database”	1,527	29	11	A-2
20	“translocation database”	4,535	3	7	A-3
23	“engineered gene” or “non-naturally occurring gene”	92	7	6	A-4
26	“cDNA stability”	20,071	1	24	A-5
30	“post translational modification sequence”	5,274	8	29	A-6

31	“protein stability”	3,909	1	23	A-7
32	“predicted protein transport”	2,246	-	3	A-8
33	“shuffled gene”	878	7	3	A-9
34	“site-directed mutagenesis gene”	22,270	2	45	A-10
35	“methylated sequence”	161	2	84	A-11
36	“epigenetic variation”	70	-	1	A-12

Applicants respectfully submit that claims 18-20, 23, 26 and 30-36 contain subject matter which is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. As a result, Applicants respectfully submit that the claims comply with the written description requirement required by 35 U.S.C. § 112, first paragraph. Accordingly, Applicants request the withdrawal of the rejections and allowance of all pending claims.

***Claim Rejections under 35 U.S.C. § 112, Second Paragraph***

Claims 11, 13-21 and 23-36 were rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicants respectfully submit that appropriate amendments have been made to the claims. For example, claims 11 and 13-21 have been amended to be consistent with the claim format used in allowed claim 12. Similarly, claims 23-26 have been amended to be consistent with the claim format used in allowed claim 22. As previously described, claims 18-20, 23, 26 and 30-36 recite well known terms that clearly and distinctly claim the invention in light of the specification and common knowledge of those skilled in the art. As a result, Applicants respectfully submit that the claims distinctly claim the invention are required by 35 U.S.C. § 112, second paragraph. Accordingly, Applicants request the withdrawal of the rejections and allowance of all pending claims.

***Allowed Claims***

Applicants gratefully acknowledge the allowance of claims 1-3, 5-7, 9-10, 12, 22, 37-42, 44-53, 56-57 and 203-204.

***Conclusion***

Applicants respectfully submit that claims 1-3, 5-7, 9-10, 12, 22, 37-42, 44-53, 56-57 and 203-204, as amended, are fully patentable. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the examiner has any questions or comments, or if further clarification is required, it is requested that the examiner contact

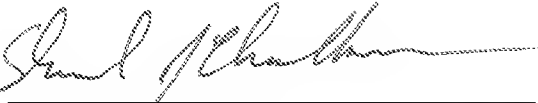
Appl. No. 09/998,904  
Amdt. dated Aug. 15, 2007  
Reply to Office Action of Jun. 15, 2007

the undersigned at the telephone number listed below.

Date: August 15, 2007

Respectfully submitted,

CHALKER FLORES, LLP

By 

Daniel J. Chalker  
Reg. No. 40,552  
Tel.: (214) 866-0001  
Fax: (214) 866-0010

2711 LBJ Frwy  
Suite 1036  
Dallas, Texas 75234



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<b>GSS:</b> Genome Survey Sequence records.	<b>CDD:</b> conserved protein domain database.
<b>Protein:</b> sequence database.	<b>3D Domains:</b> domains from Entrez Structure.
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<b>SNP:</b> single nucleotide polymorphism.	<b>GEO DataSets:</b> experimental sets of GEO data.
<b>Gene:</b> gene-centered information.	<b>Cancer Chromosomes:</b> cytogenetic databases.
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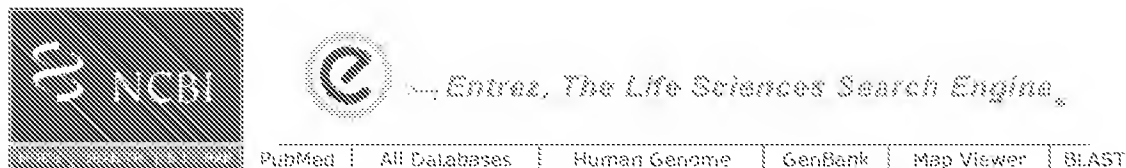
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
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


































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


































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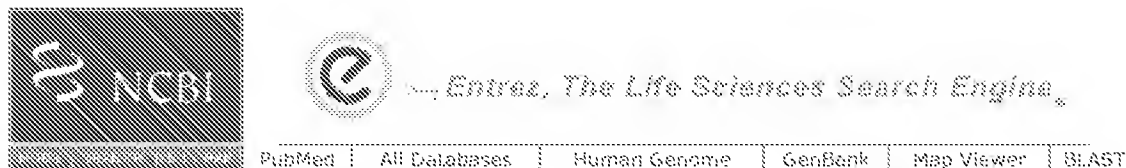
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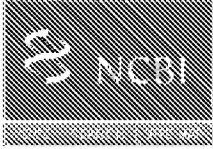

PubMed | All Databases | Human Genome | GenBank | Map Viewer | BLAST

Search across databases "predicted protein transport"   [Help](#)

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<b>390</b> PubMed: biomedical literature citations and abstracts	<b>3</b> Books: online books
<b>2246</b> PubMed Central: free, full-text journal articles	<b>496</b> OMIM: online Mendelian Inheritance in Man
<b>none</b> Site Search: NCBI web and FTP sites	<b>none</b> OMIA: online Mendelian Inheritance in Animals
<b>none</b> CoreNucleotide: Core subset of nucleotide sequence records	<b>1</b> dbGAP: genotype and phenotype
<b>none</b> EST: Expressed Sequence Tag records	<b>26</b> UniGene: gene-oriented clusters of transcript sequences
<b>none</b> GSS: Genome Survey Sequence records	<b>none</b> CDD: conserved protein domain database
<b>none</b> Protein: sequence database	<b>17</b> 3D Domains: domains from Entrez Structure
<b>70</b> Genome: whole genome sequences	<b>2</b> UniSTS: markers and mapping data
<b>3</b> Structure: three-dimensional macromolecular structures	<b>none</b> PopSet: population study data sets
<b>none</b> Taxonomy: organisms in GenBank	<b>none</b> GEO Profiles: expression and molecular abundance profiles
<b>1821</b> SNP: single nucleotide polymorphism	<b>1</b> GEO DataSets: experimental sets of GEO data
<b>491</b> Gene: gene-centered information	<b>236</b> Cancer Chromosomes: cytogenetic databases
<b>43</b> HomoloGene: eukaryotic homology groups	<b>none</b> PubChem BioAssay: bioactivity screens of chemical substances
<b>none</b> PubChem Compound: unique small molecule chemical structures	<b>none</b> GENSAT: gene expression atlas of mouse central nervous system
<b>none</b> PubChem Substance: deposited chemical substance records	<b>1</b> Probe: sequence-specific reagents
<b>none</b> Genome Project: genome project information	<b>6</b> Protein Clusters: a collection of related protein sequences
<b>none</b> Journals: detailed information about the journals indexed in PubMed and other Entrez databases	<b>none</b> MeSH: detailed information about NLM's controlled vocabulary
<b>1</b> NLM Catalog: catalog of books, journals, and audiovisuals in the NLM collections	




































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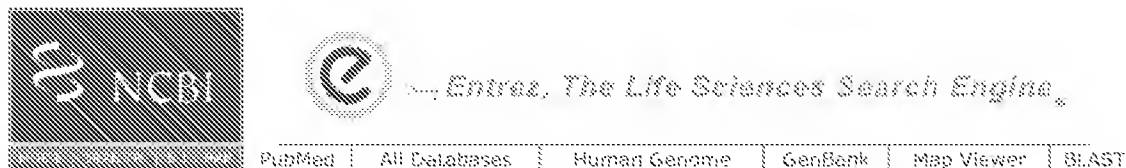
PubMed | All Databases | Human Genome | GenBank | Map Viewer | BLAST

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 - Result counts displayed in gray indicate one or more terms not found

 <b>156</b> PubMed: biomedical literature citations and abstracts	 <b>3</b> Books: online books
 <b>878</b> PubMed Central: free, full text journal articles	 <b>14562</b> OMIM: online Mendelian inheritance in Man
 <b>7</b> Site Search: NCBI web and FTP sites	 <b>2</b> OMIA: online Mendelian inheritance in Animals
 <b>none</b> CoreNucleotide: Core subset of nucleotide sequence records	 <b>4</b> dbGAP: genotype and phenotype
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 <b>none</b> GSS: Genome Survey Sequence records	 <b>782</b> CCD: conserved protein domain database
 <b>none</b> Protein: sequence database	 <b>none</b> 3D Domains: domains from Entrez Structure
 <b>6104</b> Genome: whole genome sequences	 <b>8762</b> UniSTS: markers and mapping data
 <b>none</b> Structure: three-dimensional macromolecular structures	 <b>42267</b> PopSet: population study data sets
 <b>none</b> Taxonomy: organisms in GenBank	 <b>24156492</b> GEO Profiles: expression and molecular abundance profiles
 <b>792</b> SNP: single nucleotide polymorphism	 <b>7782</b> GEO DataSets: experimental sets of GEO data
 <b>310552</b> Gene: gene-centered information	 <b>2427</b> Cancer Chromosomes: cytogenetic databases
 <b>44201</b> HomoloGene: eukaryotic homology groups	 <b>91</b> PubChem BioAssay: bioactivity screens of chemical substances
 <b>21</b> PubChem Compound: unique small molecule chemical structures	 <b>3430</b> GENSAT: gene expression atlas of mouse central nervous system
 <b>2164</b> PubChem Substance: deposited chemical substance records	 <b>1478964</b> Probe: sequence-specific reagents
 <b>253</b> Genome Project: genome project information	 <b>378</b> Protein Clusters: a collection of related protein sequences
 <b>28</b> Journals: detailed information about the journals indexed in PubMed and other Entrez databases	 <b>1</b> MeSH: detailed information about NLM's controlled vocabulary
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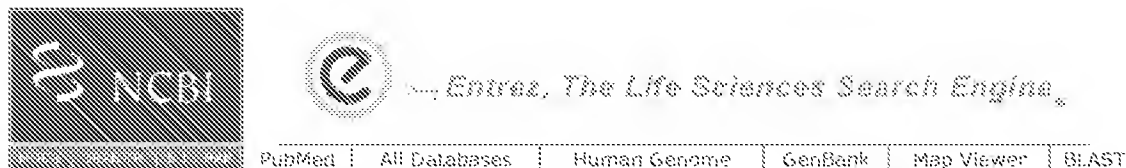


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<b>17475</b> PubMed: biomedical literature citations and abstracts	<b>45</b> Books: online books
<b>22270</b> PubMed Central: free, full text journal articles	<b>143</b> OMIM: online Mendelian Inheritance in Man
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<b>none</b> GSS: Genome Survey Sequence records	<b>none</b> CODD: conserved protein domain database
<b>none</b> Protein: sequence database	<b>384</b> 3D Domains: domains from Entrez Structure
<b>5</b> Genome: whole genome sequences	<b>none</b> UniSTS: markers and mapping data
<b>132</b> Structure: three-dimensional macromolecular structures	<b>3</b> PopSet: population study data sets
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<b>792</b> SNP: single nucleotide polymorphism	<b>1</b> GEO DataSets: experimental sets of GEO data
<b>8</b> Gene: gene-centered information	<b>none</b> Cancer Chromosomes: cytogenetic databases
<b>211</b> HomoloGene: eukaryotic homology groups	<b>none</b> PubChem BioAssay: bioactivity screens of chemical substances
<b>none</b> PubChem Compound: unique small molecule chemical structures	<b>none</b> GENSAT: gene expression atlas of mouse central nervous system
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<b>none</b> Genome Project: genome project information	<b>none</b> Protein Clusters: a collection of related protein sequences
<b>none</b> Journals: detailed information about the journals indexed in PubMed and other Entrez databases	<b>none</b> MeSH: detailed information about NLM's controlled vocabulary
<b>6</b> NLM Catalog: catalog of books, journals, and audiovisuals in the NLM collections	

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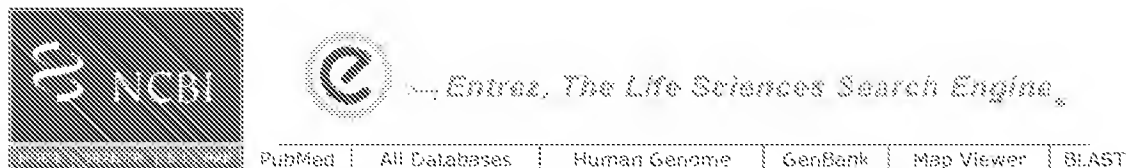


Search across databases "methylated sequence"   [Help](#)

- Result counts displayed in gray indicate one or more terms not found

<b>32</b>	<b>PubMed:</b> biomedical literature citations and abstracts	<b>84</b>	<b>Books:</b> online books
<b>161</b>	<b>PubMed Central:</b> free, full text journal articles	<b>131</b>	<b>OMIM:</b> online Mendelian inheritance in Man
<b>2</b>	<b>Site Search:</b> NCBI web and FTP sites	<b>none</b>	<b>OMIA:</b> online Mendelian inheritance in Animals
<b>none</b>	<b>CoreNucleotide:</b> Core subset of nucleotide sequence records	<b>9</b>	<b>dbGaP:</b> genotype and phenotype
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<b>6</b>	<b>GSS:</b> Genome Survey Sequence records	<b>1</b>	<b>CDD:</b> conserved protein domain database
<b>2</b>	<b>Protein:</b> sequence database	<b>46</b>	<b>3D Domains:</b> domains from Entrez Structure
<b>212</b>	<b>Genome:</b> whole genome sequences	<b>8852</b>	<b>UniSTS:</b> markers and mapping data
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<b>19815377</b>	<b>SNP:</b> single nucleotide polymorphism	<b>24</b>	<b>GEO DataSets:</b> experimental sets of GEO data
<b>305</b>	<b>Gene:</b> gene-centered information	<b>46</b>	<b>Cancer Chromosomes:</b> cytogenetic databases
<b>81</b>	<b>HomoloGene:</b> eukaryotic homology groups	<b>none</b>	<b>PubChem BioAssay:</b> bioactivity screens of chemical substances
<b>2</b>	<b>PubChem Compound:</b> unique small molecule chemical structures	<b>434</b>	<b>GENSAT:</b> gene expression atlas of mouse central nervous system
<b>5</b>	<b>PubChem Substance:</b> deposited chemical substance records	<b>13</b>	<b>Probe:</b> sequence-specific reagents
<b>590</b>	<b>Genome Project:</b> genome project information	<b>none</b>	<b>Protein Clusters:</b> a collection of related protein sequences
<b>1</b>	<b>Journals:</b> detailed information about the journals indexed in PubMed and other Entrez databases	<b>2</b>	<b>MeSH:</b> detailed information about NLM's controlled vocabulary
<b>1</b>	<b>NLM Catalog:</b> catalog of books, journals, and audiovisuals in the NLM collections		

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Search across databases "epigenetic variation"   [Help](#)

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<b>PubMed:</b> biomedical literature citations and abstracts	<b>Books:</b> online books
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<b>SNP:</b> single nucleotide polymorphism	<b>GEO DataSets:</b> experimental sets of GEO data
<b>Gene:</b> gene-centered information	<b>Cancer Chromosomes:</b> cytogenetic databases
<b>HomoloGene:</b> eukaryotic homology groups	<b>PubChem BioAssay:</b> bioactivity screens of chemical substances
<b>PubChem Compound:</b> unique small molecule chemical structures	<b>GENSAT:</b> gene expression atlas of mouse central nervous system
<b>PubChem Substance:</b> deposited chemical substance records	<b>Probe:</b> sequence-specific reagents
<b>Genome Project:</b> genome project information	<b>Protein Clusters:</b> a collection of related protein sequences
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